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NEW CONCEPT OF FILING PATHOLOGICAL TISSUE SAMPLES

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Pathology is a morphological discipline, and the improvement of diagnosis level depends on the accumulation of data. With the advent of the era of precision medicine, the preservation of pathological data is particularly important. However, the vast majority of pathology departments are facing the same problem, the unlimited increase of pathological data and the relatively limited storage space of pathology. In addition, one of the key links in the histopathology workflow is the filing of patient sections and wax blocks, and retrieval is used for re detection or further detection of sections and wax blocks. There are also many clinical trial projects added. With the advent of the information age, resource sharing and communication and cooperation between peers are increasing, and the number of slices and wax blocks is also increasing year by year. The traditional management methods of medical records can not be quickly filed, retrieval takes a lot of time, and manual slicing and wax block cabinet occupy space and other problems have seriously hindered the process of modern management of pathological data The scientific management of materials is becoming more and more important, and the application of computer to manage pathological data has become an important trend at home and abroad.[1-2]

The Department of pathology must set up a pathology archives room and a designated management system for pathological records (including filing, borrowing and returning procedures of pathological test data), which should be managed by special personnel. There are strict legal regulations on the storage time of pathological data all over the world. In China, it is stipulated that the storage time of pathological data is 15 years for outpatients and 30 years for inpatients.[3-4] With the increasing incidence rate of cancer, the aging of

population and the continuous improvement of prevention consciousness have resulted in a significant increase in the storage of pathological data samples. Therefore, we should actively implement the computer management of pathological examination data in order to achieve the storage and traceability of pathological samples.

To optimize the workflow and solve the problem of pathological data storage, we first introduced Arcos and Arcos into Chinese mainland. SL automatic, traceable slide and wax block safety management system, the management system is simple and fast, which greatly optimizes our pathological data management process, but also saves a lot of manpower and material resources, so that pathological data can be more traceable, reduce the risk of sample loss, ensure the safety of samples to the greatest extent, and improve the efficiency of pathological data management.

	Manual management(h)	Arcos management system(h)	Time saved(h)
Sorting and filing	3,150	794	2,356
Rework	395	188	207
Total time	3,545	982	2,563
Time/block	0.03	0.01	0.02

In our department of Pathology, 300000 / 210000 sections and wax blocks can be completed every year, which is a very laborious and risky work, and once wrongly filed, it will have a significant impact on the treatment of patients in the future. Before the introduction of Arcos and Arcos SL slide and wax block safety management system, many slices and wax blocks were scattered in the data management database. At the same time, a large number of sections and wax specimens also make it difficult to locate specimens for filing, borrowing and returning. In addition, the data manager completed a day of data archiving, but also consumed a lot of energy and time. According to statistics, it takes 4-6 hours to complete the filing of nearly 1000 slices and wax blocks every day. After the introduction of the safety management system for slides and wax blocks of Arcos and Arcos SL, the slices and wax blocks of our department were temporarily stored in a short-term data management database. After about 1-1.5 months, they were moved to the archives room underground for long-term storage through scanning tray. At the same time, the Arcos system is easy to relocate.

At present, the data storage in most hospitals is manually arranged according to the number of pathological cases and time sequence. This way of work greatly increases the error of specimens in the process of storage, retrieval and re filing, resulting in the loss of samples.

Since 2019, the Department has used the safety management system for slides and wax blocks of Arcos and Arcos sl. the slices and wax blocks do not need to be filed according to the chronological order of the cases as before. The slices and wax blocks can be randomly placed in the tray, and all the slices and wax blocks are stored in the tray after the two-dimensional code scanning. Each tray can store 240 slices and wax blocks, and the scanning time of each tray is about 2 minutes. The scanning time may be affected by the quality of slices and wax blocks, the quality of QR code printing, or the presence of paraffin on wax blocks. If the scanning is incomplete, you can manually input the case number. In our actual work, incomplete scanning is not often happened, mainly due to the existence of paraffin residue on the wax block, which blocks the pathological number and affects the scanning.

In the past work of manually filing slices and wax blocks, it usually takes a long time to find the wrong storage location of a slice or wax block. Especially in the process of repeated loan consultation of some key sections, it is often uncertain whether to return them. Now we can quickly locate through the system's search function, saving a lot of time. Therefore, an important performance of Arcos and Arcos SL is to accurately record the storage location of each slice and wax block in a specific tray or cabinet. It is very important that a specific slice and wax block can be retrieved very quickly at any time. Using Arcos and Arcos SL's slice and wax block security management system makes it very easy to retrieve the slices and wax blocks that need further detection or borrowing. As long as we input the ID number we want to query on the handheld computer, we will immediately know which cabinet the slice or wax block is stored in, which tray, and which specific location in the tray. This means that we do not need to spend a lot of time in the Searching for the target slices and wax blocks in the vast number of slices and wax blocks will minimize the risk of retrieval errors. In general, we are no longer faced with the "loss" of sections and wax blocks that have been artificially made due to filing errors. Once the slices and wax blocks are placed in the tray for scanning, we can determine its position and master all its data information through the palm computer.

At the same time, the software is very simple and intuitive, easy to operate and complete all steps. It is very helpful to deal with the complicated filing, retrieval and re filing of pathology department every day, and all the information is displayed on the equipment. After the chips and wax blocks are lent and returned, they can be placed in any tray and scanned again for new storage space. Our pathology department has introduced the safety management system for slides and wax blocks of Arcos and Arcos SL, which has indeed brought us some

changes: 1) the traceability of slides and wax blocks has been greatly improved. Because the system can know where the samples are, who borrowed them, and when to lend and return them, the traceability is really achieved. This function helps quality control and laboratory certification. 2) We can optimize the time and space more reasonably: the Department of pathology archives personnel do not need to manually file, retrieve tissue samples, we only need to put the specimens into the tray, and scan it, which can save manpower to the greatest extent. At the same time, it can save 30% of the space, which is more in line with the needs of the pathology department for storage space. 3) After using the system, the possibility of sample loss in the process of filing, retrieval and re filing is greatly reduced. 4) Another important aspect of Arcos and Arcos SL system is the "3 + 3" security data guarantee. The scanner has triple data backup, computer and facility network. The universal readable backup system means there will never be data loss. There are also three layers of security measures: users, supervisors and administrators to ensure any unauthorized access.

With the continuous expansion of clinical demand for archival organizations and the growing demand for translational research, it is necessary for pathology departments and relevant scientific units of large medical institutions to establish a tracking and data management system to meet the needs of clinical and scientific research, as well as the requirements of insurance law.

REFERENCES

1. Lu Zhenfeng, Zhou Xiaojun, Shi Qunli, et al. Scientific management of pathological data [J]. Journal of medical postgraduates, 2007; 20(9): 969-971.
2. Wu Bo, Zhou Xiaojun. Current situation and problems of computer management of pathological data [J]. Journal of clinical and Experimental Pathology, 2002; 18(6): 656-657.
3. Sinard J. Morrow JS. Informatics and anatomic pathology meeting challenges and charting the future[J]. Hum pathol, 2001; 32(2): 143-148.
4. Hamlin WB. Requirements for accreditation by the college of American pathologists laboratory accreditation program [J]. Arch pathol Lab Med, 1999; 123(6): 465-467.